MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM

NR Eligible: yes ___
no ___

Property Name: Building Nos. T-128 and T-134 Inventory Number: AA-2395

Address: Greenbury Point Road Naval Radio Transmitter Facility Historic district: ___ yes X no

City: Annapolis Zip Code: 21402 County: Anne Arundel

USGS Quadrangle(s): Annapolis

Property Owner: US Naval Academy Tax Account ID Number: ___

Tax Map Parcel Number(s): ___ Tax Map Number: ___

Project: DOE for Midshipmen Store Warehouse and Associated Gateho Agency: USNA

Agency Prepared By: The Louis Berger Group, Inc.

Preparer's Name: Kristie Baynard Date Prepared: 3/20/2009

Documentation is presented in: ___

Preparer's Eligibility Recommendation: ___ Eligibility recommended X Eligibility not recommended

Criteria: ___A ___B ___C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G

Complete if the property is a contributing or non-contributing resource to a NR district/property:

Name of the District/Property: ___

Inventory Number: ___ Eligible: ___ yes Listed: ___ yes

Site visit by MHT Staff ___ yes X no Name: ___ Date: ___

Description of Property and Justification: *(Please attach map and photo)*

Building T-128 Description

Setting

Building T-128 is part of the U.S. Naval Reservation on Greenbury Point located in Annapolis, Maryland. Facing north, the Transmitter Building (T-128) is sited on a level grassy lot surrounded by the Greenbury Point golf course. It is set back from Greenbury Point Road with a concrete walkway leading from the road to the wide concrete steps that ascend to the front entry. Several mature trees stand in front of the building, and a tall chain-link gated fence is connected to the building and encloses the rear yard that backs up to the golf course. An asphalt and gravel driveway with a parking area encircles the building and has an entry and exit to Greenbury Point Road.

Description

Built in 1954, Building T-128 originally functioned as a High Frequency (HF) transmitter building for the U.S. Naval Radio

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Eligibility recommended ___ **Eligibility not recommended** X

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

[signature] 6/5/2009

Reviewer, Office of Preservation Services **Date**

[signature] 6/22/09

Reviewer, National Register Program **Date**

2009015l6

Transmitter Facility (NRTF) until it was transferred to the U.S. Naval Academy in 1977. One story in height, this utilitarian building is constructed of precast concrete panels. The main block features a rectangular-shaped footprint with a shorter central block that projects from the façade and is five bays wide and one bay deep. The building is capped with a flat roof with metal ventilators. Reflecting its function as a transmitter building, there are no windows in the structure except for the two metal louvered vents that flank the front entrance. The entrance contains double-leaf glass metal doors with a metal louvered rectangular transom. Sheltering the entry bay is a wide flat-roof concrete canopy.

The front and rear elevations of the main block are visually and structurally divided with concrete buttresses that taper toward the ground. The rear elevation is divided into 11 bays by these concrete supports. Both of the side elevations have raised concrete loading decks that are sheltered with flat-roof awnings supported with square concrete posts. Each side elevation has a roll-up metal vehicular door flanked on one side with a single-leaf flush metal pedestrian door. A ramp on the west elevation leads below ground level to a loading dock in the basement of the front projecting block of the building. The entrance into the basement from the ramp contains double-leaf flush metal doors.

The functional aspect of the building is illustrated by the porcelain dome caps that are found in pairs below the building's cornice line and extend around the perimeter of the main block. Above the dome caps is a flat metal bar that runs the perimeter with pairs of holes corresponding with each cap. It appears that wires went through the holes and connected to the metal bars that extended from the caps. This same arrangement is also visible on the interior of the building. These are feed-through insulators for the transmission lines that carried the signal from the transmitters to antennas.

The interior of the main block is one floor with a basement and sub-basement. The first floor of the main block is a single large open space that was known as the transmitter room. The smaller block that fronts the building, known as the "head house," contains the stairs to the basement, and much of it has been partitioned with structural glazed tile walls to create separate storage and office spaces. According to original 1952 drawings of the building, these partition walls and their materials appear to be original. The basement of the building is distinguished by rows of round concrete mushroom columns, columns with inverted cone caps, that support the first floor.
The transmission lines that extended from Building T-128 led to semicircular switchyards located around the building that allowed different transmitters to be connected to different antennas. After passing through the switchyard, the transmission lines continued to the antennas, which were supported by wood poles or steel towers, depending on the antenna type. The antennas needed to support the HF transmitter building were fairly large and connected by wires between multiple towers located hundreds of yards from the building. The pairs of wires connected to the insulator caps would be spaced one to two feet apart and either made of copper-coated steel or phosphor-bronze. The antennas used to transmit signals from this building as well as the switchyards have been demolished (N. England, personal communication 2009).

Building T-134

Building T-134, built in 1954, is a small guard house associated with Building T-128. It is located northwest of Building T-128 at the entrance to the facility. Constructed of cast concrete, it has a single-leaf metal door with two lights on the facade and one-over-one windows on the façade and north and west elevations. It is capped with a shed roof.

The 1952 original drawings of the property illustrate a security fence with barbed wire that encircled Building T-128. The fencing, along with the guard house, created a highly secure zone for the transmitter building.

Building T-128 Historical Background

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_____ _____

Reviewer, National Register Program **Date**

The U.S. Naval Radio Station Annapolis, later known as NRTF, was established in 1918 as a Very Low Frequency (VLF) station to provide a secure communications link between the United States, France, and England. The facility was completed in 1918; however, it was enlarged during the 1920s with additional antennas, support structures, housing, and infrastructure resources. During the 1930s the mission of the facility was expanded to include High Frequency (HF) radio transmissions, and the facility thus supported HF, Medium Frequency (MF), and Low Frequency (LF) transmitters to complement the original VLF transmitter. The VLF transmitter was replaced in 1937 with a new antenna system.

The Naval Radio Station Annapolis played a vital role during World War II as it became the "primary transmitting station for communication command and control with deployed units" (O'Donnell et al. 1996). Several additional structures were added during this period, including transmission towers, residences, a receiving station, and a golf course.

In 1953 the Naval Radio Station Annapolis was integrated into the U.S. Naval Communications Station, Washington, D.C. Additional construction at the facility occurred during the early Cold War period, including several transmitter buildings (including Building T-128, the subject of this evaluation), a helix house, a battery house, a control building, several transmitters, and several towers. Changes to the facility occurred throughout the late Cold War era (1965-1989), most consisting of upgrading the older transmitters and antennas. The station was reassigned in 1974 to the Naval Communications Area Master Station, Atlantic and was renamed the Naval Radio Transmitter Facility. Two years later the MF and HF transmitters at the NRTF were removed or transferred and replaced with updated equipment (O'Donnell et al. 1996:8.4). During the Cold War era the station served as a major communications center for the Navy's submarine fleet (Global Security 2009).
NRTF was closed in 1991 by Base Realignment and Closure. In 1994, 231 acres was transferred to the U.S. Naval Academy, excluding the towers. The majority of the buildings and antennas were demolished circa 1996.

Buildings T-128 and T-134

Several memos from March 1952 between the Commanding Officer of the Naval Radio Station to the Chief of the Bureau of Ships exist in Special Collections at the USNA Nimitz Library and discuss possible locations of a new transmitter building at Naval Radio Station Annapolis (Nimitz Library, Miscellaneous Records of the Naval Station Box 4, Folder 16). The first memo recommends a prompt decision regarding the building's location in order for the design phase of the project, including the associated HF antenna systems, the necessary infrastructure, and the transmitter building itself, to begin. The memo states that at the time there were approximately 70 acres of wooded land in the northwest corner of the Station and 80 acres mostly occupied by the USNA golf course that would be available for development. Two primary plans were introduced with a third plan as an expansion of one of the two plans. The plan recommended by the Commanding Officer was to site the building on the twelfth fairway alongside Greenbury Point Road. The twelfth tee was to be relocated as part of this plan. In addition, the Commanding Officer recommended the expansion plan, which consisted of clearing approximately 30 acres in the northwest area of the station. This plan allowed for immediate construction and provided an area for the construction of three rhombic antennas when the need should arise. It also allowed the USNA to construct new holes for the golf course for the relocation of the twelfth and thirteenth holes.

The Public Works Department at the U.S. Naval Academy maintains drawings associated with the original construction of Building T-128 as well as a proposed warehouse addition drawn in 1979. Building T-128 was designed in 1952 by Whitman, Requardt and Associates, a well-established engineering and architecture firm based in Baltimore, Maryland. Originally called Norton, Bird, and Whitman, the parent firm was established in 1915. The firm continues its practice today with several offices throughout the mid-Atlantic region. Many of their projects during the first half of the twentieth century were infrastructure types,

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including sand filtration, wastewater treatment, and water tunnels. During World War II the firm employed over 700 people and designed and constructed arsenals and other military related resources across the country. It was during this period that the firm became Whitman, Requardt and Associates. The firm expanded and diversified its practice during the second half of the twentieth century by taking on transportation projects, building design, and marine engineering (Whitman, Requardt and Associates 2009).

Although Whitman, Requardt and Associates prepared the design of the building, Building T-128 was based on a standardized plan from The Handbook of Naval Shore Station Electronics Criteria (1956-1960), which lists requirements for site location, antenna arrangement, and building design. The manual explains that transmitter building design had become standardized over several years to a windowless structure constructed of reinforced concrete in a rectangular or T-shaped footprint. The manual also explains that the transmitter room should be no longer than 200 feet in length. In addition, the building must have the transmitter equipment floor area, a full basement, and a head house. The head house would hold the terminal equipment, administrative office, electronics storage, and an electronics repair shop. The manual explains that the basement area of the head house was used for the air conditioning, heating, and dehumidification equipment. Another important feature of transmitter buildings was the loading bays. The manual recommends that loading bays be located at both ends of the main floor of the building as well as in the basement in conjunction with a loading ramp or a crane arrangement (NAVSHIPS 1956).

The design of Building T-128 is representative of the features outlined in the Navy's Manual of Shore Station Electronics Criteria. It is constructed of pre-cast concrete, contains no windows, has a T-shaped footprint, contains the necessary loading bays, and has one main level for the transmitters as well as a full basement, a head house, and a few additional spaces for storage and administrative use. The building was approximately 72 feet long, which meets the requirement as being no longer than 200 feet in length. The construction of Buildings T-128 and T-134 was completed in 1954.

The manual discussed antenna arrangement prior to the requirements of the transmitter, emphasizing that the antennas were an integral component of the transmitter building's design. The manual states, "First consideration in the development of a transmitter site must be given to antennas." The location of the antennas in relation to the transmitter building was important in order to keep the feedlines short. The recommended arrangement for the antenna layout was one in a rosette pattern with the transmitter building in the center, the rhombic antennas on the periphery, and the omnidirectional antennas inside the rhombic circle.

In addition to the antennas, the switching system was an essential aspect of the transmitter facility's design in order to ensure the best use of the equipment and the antennas. The manual states that the Navy was using "stacked-boom" switches in 1956 when the manual was written. Although these switches had their limitations, including the inability to switch one circuit while others were active without danger to personnel or equipment, stacked-boom switches had several advantages. They were rugged, electronically sound, could be used with a large number of different combinations of transmitters and antennas, and, most importantly, adequate spacing of transmitter lines could be maintained throughout to prevent coupling between equipment. The manual included an illustration of a typical outside switching arrangement, or switchyard, which showed the switchyards arranged in semi-circular segments around the perimeter of the transmitter building (NAVSHIPS 1956).

According to Gene Beaver, a Navy Radioman stationed at the Naval Radio Station Annapolis during the 1950s, Building T-128 housed an AN/FRT-4 transmitter and approximately six AN/FRT-39 and AN/FRT-40 transmitters. The AN/FRT-4 transmitter, a LF transmitter, was used for ship-to-ship communications and was connected to a 600-foot vertical tower adjacent to Building T-128. AN/FRT-39 and AN/FRT-40 transmitters are HF transmitters that were used mostly for RATT (Radio Teletype) telecommunications. The AN/FRT-39 and AN/FRT-40 transmitters were connected to rhombic antennas, which is a horizontal wire-type antenna typically supported by 40-foot to 60-foot telephone poles. Mr. Beaver also stated that a number of conical monopole antennas were also installed around Building T-128. Conical monopoles are omnidirectional antennas that can stand up

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to 100 feet tall and were most likely used for transmitting to ships in the mid-Atlantic. The transmission lines from Building T-128 would have passed through the switchyard and would then be attached to the antennas (N. England, personal communication 2009).

Building T-128 is shown in an aerial photograph of the Naval Radio Station taken in 1972. The semi-circular segments of the switchyard are visible in the photograph and appear to be in a configuration similar to that shown in the 1956 manual. Also visible in the photograph is a large vertical radio tower, located northwest of Building T-128, which is most likely the 600-foot tower recalled by Mr. Beaver (Beaver, personal communication 2009).

Background of Naval Radio Station Annapolis Evaluations

In 1996 NRTF was inventoried and evaluated by R. Christopher Goodwin and Associates, which was undertaken in compliance with Section 106 of the National Historic Preservation Act (NHPA). Plans involved the removal of the antennas prior to the facility's closing in 1996. The evaluation covered 21 buildings, structures, and antenna systems (Best 1996). Buildings T-128 and T-134 were not surveyed in 1996 for an unknown reason. At that time the LF transmitter was determined eligible for the National Register as a multiple component property. The 1996 report documents the LF transmitter as consisting of the LF transmitter building (Building 60), two helix houses (Buildings 68 and 69), and several World War II-era "Marconi" Triatic antenna. The LF Marconi Triatic antenna was determined eligible for the National Register under Criterion A for its communications role during World War II. It was also determined eligible under Criterion C as an "intact, distinguishable example of a World War II-era triatic antenna system" (Best 1996:8.6).

Several other NRTF resources were surveyed and evaluated in 1996, including a few mission-related resources such as Building NA5, a power house/transmitter building, which was determined ineligible because of its compromised integrity. The Louis Berger Group, Inc., prepared a DOE on Building NA5 (AA-2192) in 2006 concurring with the 1996 recommendation (Dixon 2006).

Many of the resources surveyed in 1996 have since been demolished, and the subsequent conversion of the site into a nature preserve has compromised the integrity of the site. Because the majority of the antennas and associated buildings are no longer extant, the NRTF no longer conveys its historical significance as a Naval communications facility. In 2003 a DOE was completed on NRTF, which stated that the site was not an eligible historic district as it did not meet National Register Criteria A, B, C, or D. The 2003 DOE states that the only remaining radio towers at that time were 7, 8, and 9, which have "no inherent significance" (Maready 2003).

Evaluation of Building T-128 and T-134

Building T-128, a 1954 transmitter building, is a structure on Greenbury Point that is associated with NRFT. There are two other Naval transmitter buildings associated with NRTF, Buildings 5 and 60; however, these two structures have been determined ineligible because of a lack of integrity; in particular, Building 60 was determined not eligible since it no longer serves its historical function and "stands alone, thus depriving it of its previous associations. There is no remaining evidence of the advances in military technology that the complete facility demonstrated in 1996" (Maready 2003).

Building T-128 has undergone minimal, if any, alterations since its construction in 1954 and is illustrative of the standard design for transmitter buildings constructed by the U.S. Navy during the Cold War era. However, the integrity of the building as a whole has been compromised by the demolition of the relating transmitter equipment, antennas, and switchyards built concurrently with the building. The transmitter lines that exited the building, the switchyards, and the antennas were part of the building's design and

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are integral to its function; thus the integrity of design and materials has been diminished. In addition, the integrity of setting, feeling, and association has been lost not only because of the removal of the antennas and the switchyards associated with Building T-128, but also as a result of the demolition of the majority of the buildings and antennas associated with the NRTF as a whole. Thus, Building T-128 no longer conveys its function as a transmitter building.

Building T-128 and its associated structure, Building T-134, are not eligible for the National Register of Historic Places under Criterion A or Criterion C, as the buildings no longer convey their association with the Naval Communications Program and do not illustrate advancements in military technology owing to the loss of the transmitting equipment, switchyards, and antennas originally built as part of the transmitter building as well as the loss of the majority of structures that were once associated with NRTF. The buildings are not associated with any significant persons and are therefore not eligible under Criterion B. Building T-128 and Building T-134 were not evaluated under Criterion D.

Bibliography

Anonymous
1972 Annapolis, Maryland. Aerial Photograph of the U.S. Naval Radio Station" Record Group 428-GX Records of the Department of the Navy 1947-, Box 340, National Archives, College Park, Maryland.

Beaver, Gene
2009 Former radioman stationed at the Naval Radio Station Annapolis during the 1950s. E-mail to Kristie Baynard on April 8. E-ail on file, The Louis Berger Group, Inc., Washington, D.C.

Best, Brooke V.
1996 Architectural Inventory and Evaluation of Antenna Structures, NRTF, Annapolis, Maryland." Prepared for NAVFAC-Atlantic Operations by R. Christopher Goodwin and Associates, Frederick, Maryland.

Dixon, Stuart
2007 Determination of Eligibility Form for Helix House, NA5. Prepared for USNA by The Louis Berger Group, Inc., Washington, DC.

England, Nick
2009 Author of U.S. Navy Communications – 1950s & 1960s webpage http://www.navy-radio.com/index.htm. E-mail to Kristie Baynard, April 6 and April 8. E-mail on file, The Louis Berger Group, Inc., Washington, D.C.

Global Security
2009 Naval Radio Transmitter Facility Annapolis. Accessed online February 20, 2009 from www.globalsecurity.org/military/facility/greenbury-point.htm.

Maryland Historical Trust [MHT]
Var. Determination of Eligibility Forms for resources at NRTF. Maintained by the Maryland Historical Trust, Crownsville.

Maready, Gerald
2003 Determination of Eligibility Form for the Naval Radio Transmitter Facility Annapolis (AA-2127). Copy available at the

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

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Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

Maryland Historical Trust, Crownsville.

Nimitz Library
1952 Miscellaneous Records of the Naval Station, Box 1-3. U.S. Naval Academy, Annapolis, Maryland.

O'Donnell, Lori, Lex Campbell, and Martha Williams
1996 Naval Radio Transmitter Facility Annapolis MIHP Form. Prepared by R. Christopher Goodwin and Associates, Frederick, Maryland.

Whitman, Requardt and Associates
2009 History. Whitman, Requardt and Associates. Accessed online on April 16, 2009 at <http://www.wrallp.com/history/tabid/154/default.aspx>

Whelan, Deborah C., Leo Hirrel, William T. Dod, J. Hampton Tucker, and Katherine Grandine
1997 Historic Context for Department of Defense: World War II Permanent Construction." Prepared for U.S. Army Corps of Engineers, Baltimore District by R. Christopher Goodwin & Associates, Inc., Frederick, Maryland. On file at the Planning Department, U.S. Army Corps of Engineers, Baltimore District, Baltimore.

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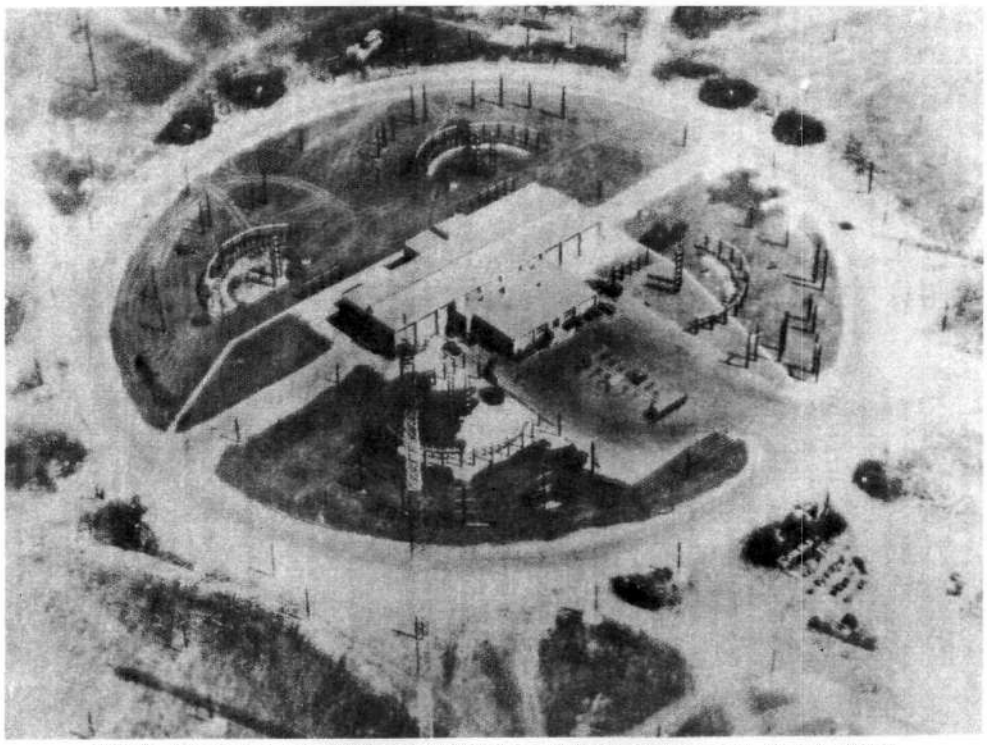
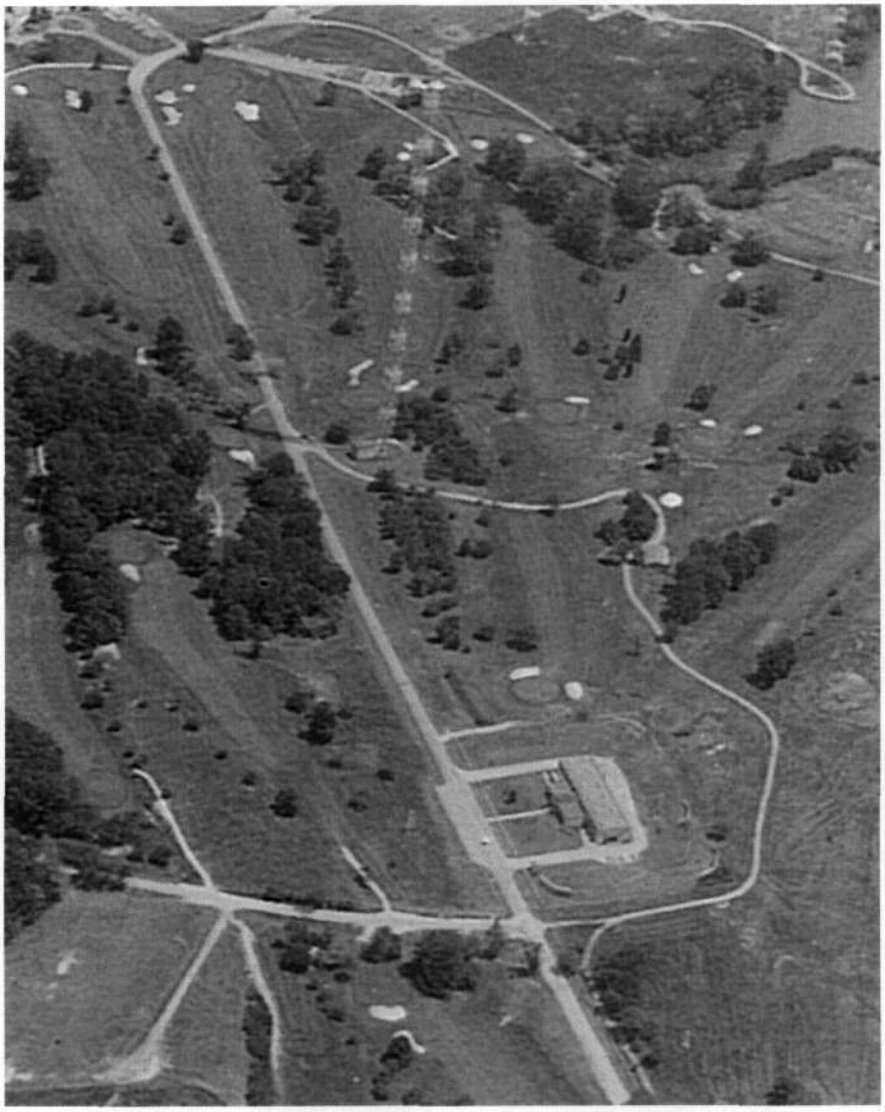
AA-2395



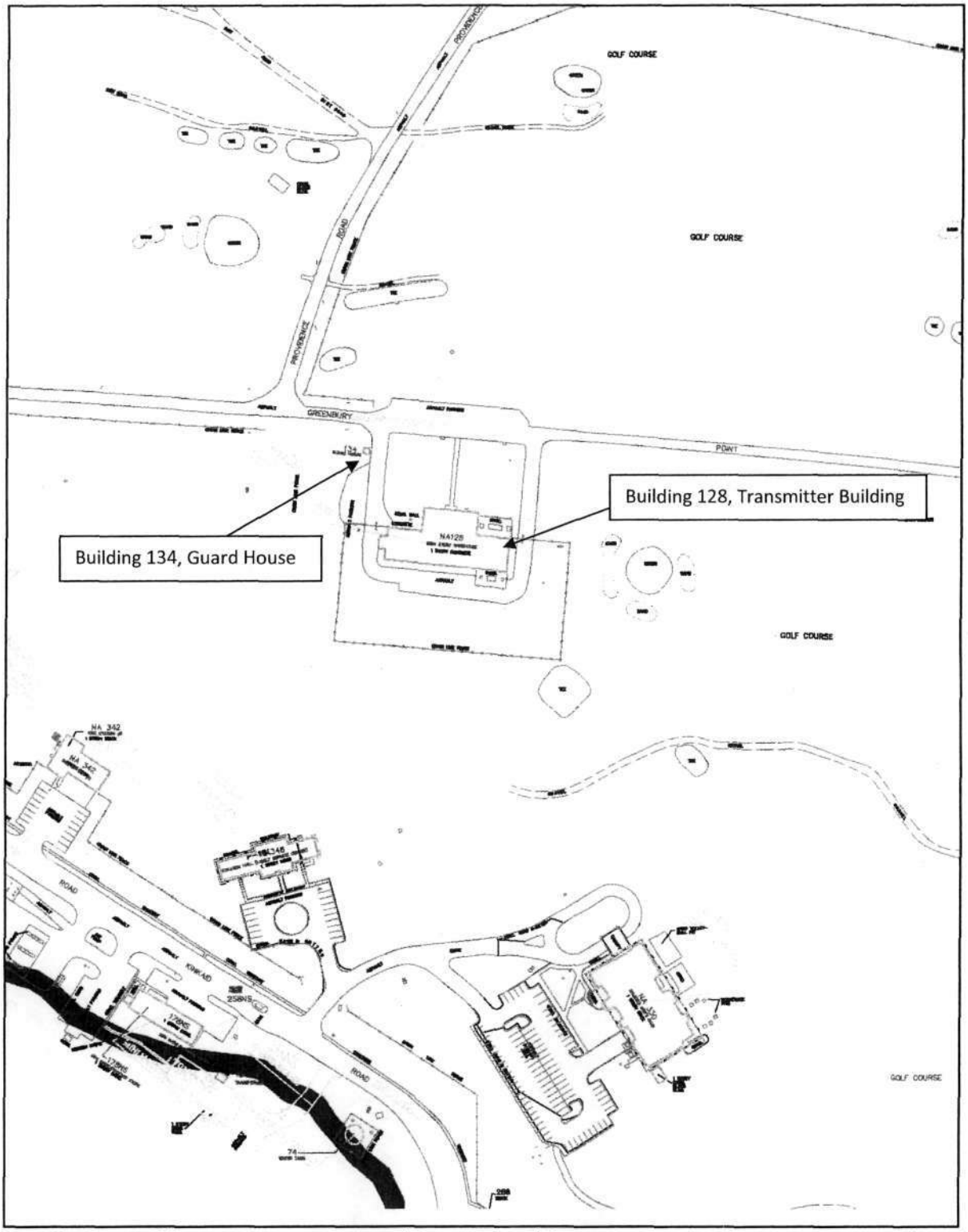
Typical example of outdoor switching system. Source: NAVSHIPS 1956

AA-2395



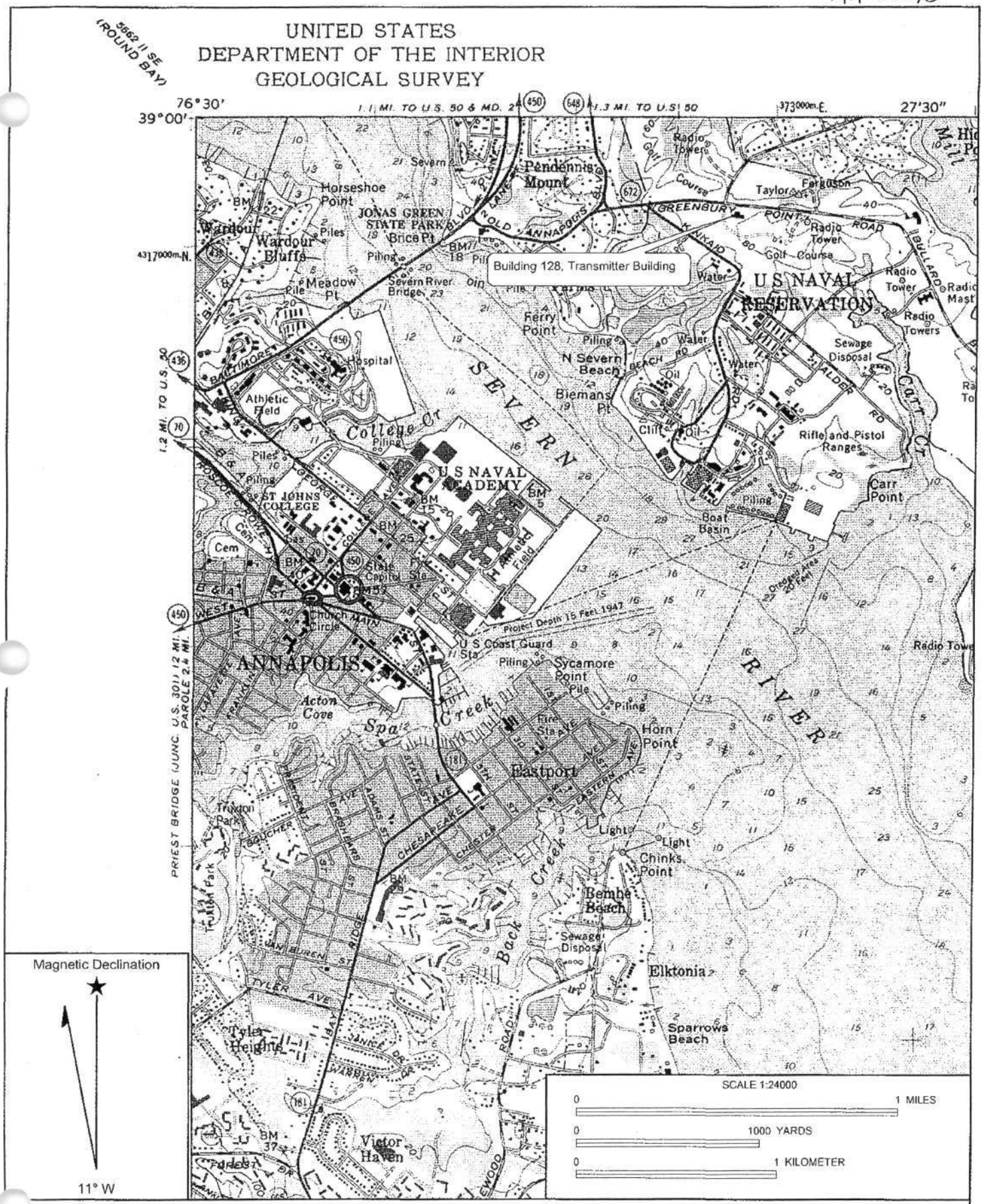
1972 Aerial photograph showing Building 128. Source: NARA

AA-2395



Site Plan for Building 128, Transmitter Building, and Building 134, Guard House at USNA Greenbury Point, Maryland.

AA-2395



Name: ANNAPOLIS
Date: 3/23/2009
Scale: 1 inch equals 2000 feet

Location: 18 0371562 E 4315180 N NAD 27
Caption: Location Map of Buildings 128 and 134
USNA at Greenbury Point
Annapolis, MD USGS Map

AA-2395

BUILDING 128,

USNA GREENBURY POINT

ANNE ARUNDEL COUNTY, MD

LOUIS BERGER GROUP, INC.

7/2009

MDSHPO

MAIN ELEVATION, LOOKING SOUTHEAST

Photo 1 OF 10

AA-2395

BUILDING 128

USNA GREENBURY POINT

ANNE ARUNDEL COUNTY, MD

LOUIS BERGER GROUP, INC.

7/2009

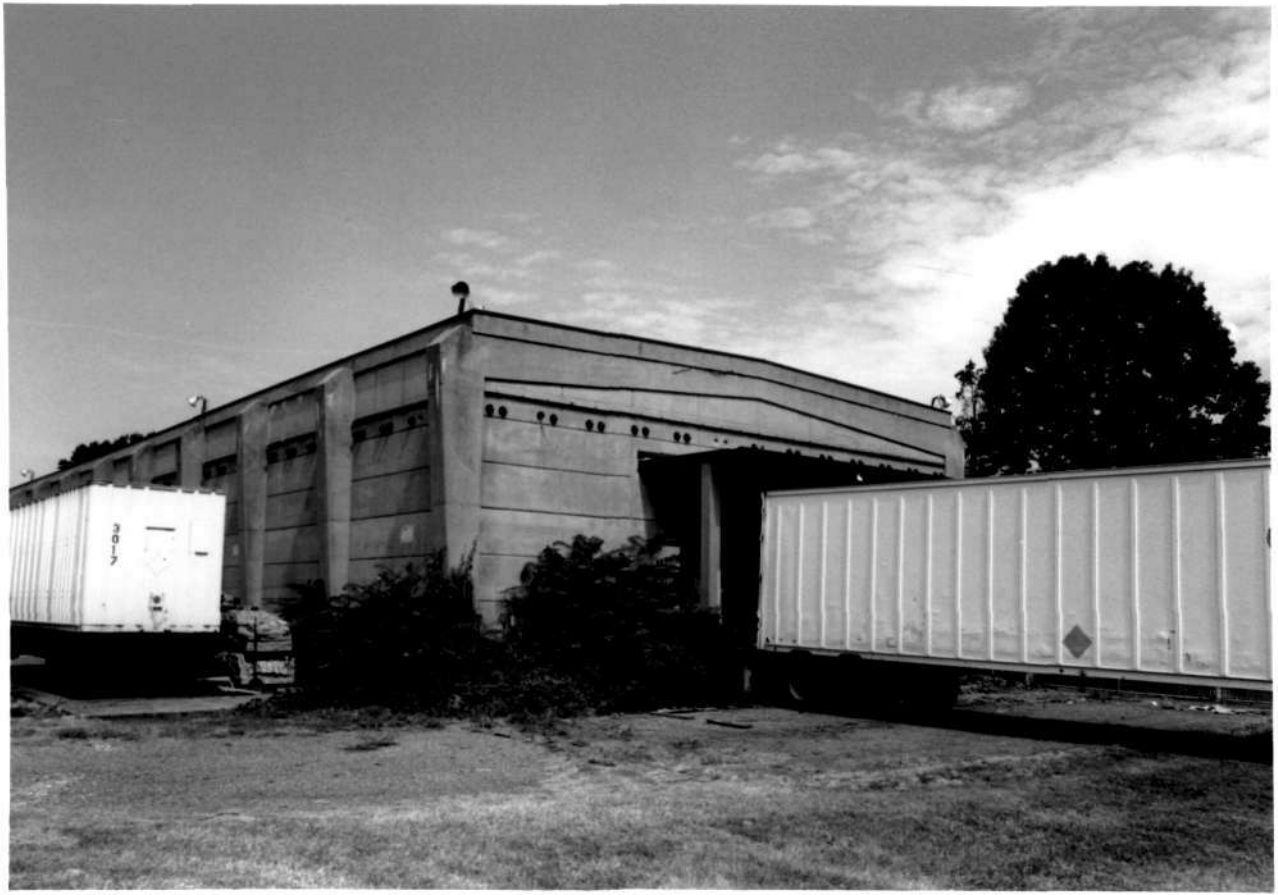
MDSHPO

MAIN ELEVATION, LOOKING SOUTH

PHOTO 20F10


T-128

AA - 2395
BUILDING 128
USNA GREENBURY POINT
ANNE ARUNDEL COUNTY, MD
LOUIS BERGER GROUP, INC.
4/2009
MDSHPO
MAIN ENTRANCE, LOOKING SOUTH
Photo 3 OF 10



AA-2395
BUILDING 128
USNA GREENBURY POINT
ANNE ARUNDEL COUNTY, MD
LOUIS BERGER GROUP, INC.
7/2009
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EAST ELEVATION, LOOKING WEST
PHOTO 4 OF 10

AA-2395
BUILDING 128
USNA GREENBURY POINT
ANNE ARUNDEL COUNTY MD
LOUIS BERGER GROUP, INC.
4/2009
MDSHPO
REAR ELEVATION, LOOKING NORTH
PHOTO 5 OF 10

AA-2395
BUILDING 128
USNA GREENBURY POINT
ANNE ARUNDEL COUNTY, MD
LOUIS BERGER GROUP, INC.
7/2009
MD SHPO
WEST ELEVATION, LOOKING EAST
PHOTO 6 OF 10


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AA-2395
BUILDING 128
USNA GREENBURY POINT
ANNE ARUNDEL COUNTY, MD
LOUIS BERGER GROUP, INC.
7/2009
MDSHPO
INTERIOR VIEW OF BASEMENT
PHOTO 7 OF 10


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AA-2395
BUILDING 128
USNA GREENBURY POINT
ANNE ARUNDEL COUNTY, MD
LOUIS BERGER GROUP, INC.
7/2009
MDSHPO
INTERIOR OF BASEMENT, DETAIL OF MUSHROOM COLUMN
Photo 8 OF 10

AA-2395

BUILDING 13A

USNA GREENBURY POINT

ANNE ARUNDEL COUNTY, MD

LOUIS BERGER GROUP, INC.

7/2009

MDSHPO

NORTHEAST CORNER, LOOKING SOUTHWEST

PHOTO 9 OF 10

AA-2395

BUILDING 128 & 134

USNA GREENBURY POINT

ANNE ARUNDEL COUNTY, MD

LOUIS BERGER GROUP, INC.

7/2009

MDSHPO

LOOKING SOUTH EAST

PHOTO 10 OF 10